

CONTENTS

BIOTECHNOLOGY AND BIOCHEMISTRY

1. Helical and Cyclic Structures in Starch Chemistry	2
2. In Vitro Gene Manipulation: An Introduction	11
3. Structure-Function Relationships in Amylases	28
4. Substrate-Based Investigations of the Active Site of CGTase: Enzymatic Syntheses of Regioselectively Modified Cyclodextrins	44
5. Enzymatic Synthesis and Use of Cyclic Dextrins and Linear Oligosaccharides of the Amylodextrin Type	51
6. Starch-Hydrolyzing Enzymes with Novel Properties	72
7. Novel Thermostable Saccharidases from Thermoanaerobes	86
8. Strategies for the Specific Labeling of Amylodextrins	98
9. Maltohexaose-Producing Amylase of <i>Bacillus circulans</i> F-2	111
10. Properties of CGTases from Three Types of <i>Bacillus</i> and Production of Cyclodextrins by the Enzymes	125

ANALYSIS AND CHARACTERIZATION

11. Analysis of Amylodextrins	140
12. Use of Multidetector for Chromatographic Characterization of Dextrins and Starch	171
13. Phosphorolytic Synthesis of Low-Molecular-Weight Amyloses with Modified Terminal Groups: Comparison of Potato Phosphorylase and Muscle Phosphorylase B	189
14. Maize Starch Sample Preparation for Aqueous Size Exclusion Chromatography Using Microwave Energy	205
15. Distribution of the Binding of A Chains to a B Chain in Amylopectins	212
16. Polymer Physicochemical Characterization of Oligosaccharides	219
17. Solution Properties and Composition of Dextrins	261
18. Linear Dextrins: Solid Forms and Aqueous Solution Behavior	273

APPLICATIONS

19. Molecular Specificity of Cyclodextrin Complexation	296
20. Preparation and Characterization of Cyclodextrin Complexes of Selected Herbicides	317
Author Index	331
Affiliation Index	331
Subject Index	332